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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/869,990	11/15/2001	Stuart Leon Soled	JHT-0004	4545

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EXAMINER	
DOUGLAS, JOHN CHRISTOPHER	
ART UNIT	PAPER NUMBER
1764	

DATE MAILED: 04/06/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/869,990	SOLED ET AL.	
	Examiner	Art Unit	
	John C. Douglas	1764	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *10 March 2006*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-34* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-34* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *15 November 2001* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

The terminal disclaimer filed on 3/10/2006 is accepted for overcoming the double patenting rejection mailed on 1/3/2006.

The abstract filed on 3/10/2006 overcomes the objection mailed on 1/3/2006.

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2. The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

3. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to

consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

4. Claims 1-14, 17, 20, 22, 24, 26, 28, 30, 33, and 34 are rejected under 35 U.S.C. 103(a) as being unpatentable over McCandlish (US 4705619) in view of Ziemer (US 5543035).

5. With respect to claims 1, 7-12, 33 and 34, McCandlish discloses contacting a hydrocarbon feedstock of tar sands under hydrocracking conditions with a bulk metal catalyst comprising $Ni(Mo_yW_{1-y}O_4)$, where y could be 0.5, which would mean the ratio of Mo to W would be 1:1, the ratio of Ni to (Mo + W) would be 1:1. Also, the moles of O would match the equation in the claim, $z = [2b + 6(c + d)]/2$ because in this case c and d each are 0.5 and b is 1, therefore, z=4, which is the value disclosed in McCandlish (see McCandlish, column 1, lines 27-31 and column 3, lines 20-23, 34-36, and 45-68).

McCandlish does not disclose fractionating the hydrocracked feedstock to produce a distillate lubricating oil fraction.

However, Ziemer discloses sending a lubricating oil base stock produced from hydrocracking to a fractionation zone to obtain a lubricating oil distillate (see Ziemer, column 7, lines 57-68).

Ziemer fractionates the lubricating oil base stock to obtain two or more fractions with varying boiling points and viscosity index values. (see Ziemer, column 7, lines 57-68).

Therefore, it would have been obvious to one having ordinary skill in the art at the time of the invention to modify the process of McCandlish to include sending a

lubricating oil base stock produced from hydrocracking to a fractionation zone in order to obtain lubricating oil distillates of varying boiling points and viscosity index values.

6. With respect to claims 2 and 3, McCandlish discloses contacting a hydrocarbon feedstock of tar sands under hydrocracking conditions with a bulk metal catalyst comprising $Ni(Mo_yW_{1-y}O_4)$, where y could be 0.5, which would mean the ratio of Mo to W would be 1:1, the ratio of Ni to (Mo + W) would be 1:1. Also, the moles of O would match the equation in the claim, $z = [2b + 6(c + d)]/2$ because in this case c and d each are 0.5 and b is 1, therefore, z=4, which is the value disclosed in McCandlish (see McCandlish, column 1, lines 27-31 and column 3, lines 20-23, 34-36, and 45-68).

McCandlish does not disclose sending the hydrocracked feed to a second hydrocracking zone.

However, Ziemer, discloses hydrocracking can take place in multiple steps (see Ziemer, column 3, lines 29-31)

According to MPEP §2144.04 VI B, the court in *In re Harza*, 274 F.2d 669 (CCPA 1960), held that a mere duplication of parts has no patentable significance in the absence of new or unexpected results.

Therefore, it would have been obvious to one having ordinary skill in the art at the time of the invention to modify the process of McCandlish to include were hydrocracking can take place in multiple steps because a mere duplication of hydrocracking stages would have no patentable significance.

McCandlish does not disclose fractionating the hydrocracked feedstock to produce a distillate lubricating oil fraction.

However, Ziemer discloses sending a lubricating oil base stock produced from hydrocracking to a fractionation zone to obtain a lubricating oil distillate (see Ziemer, column 7, lines 57-68).

Ziemer fractionates the lubricating oil base stock to obtain two or more fractions with varying boiling points and viscosity index values (see Ziemer, column 7, lines 57-68).

Therefore, it would have been obvious to one having ordinary skill in the art at the time of the invention to modify the process of McCandlish to include sending a lubricating oil base stock produced from hydrocracking to a fractionation zone in order to obtain lubricating oil distillates of varying boiling points and viscosity index values.

7. With respect to claims 4-6, McCandlish does not disclose where the second hydrocracking catalyst is a zeolite or an amorphous silica-alumina metal oxide.

However, Ziemer discloses a hydrocracking catalyst containing a crystalline zeolitic aluminosilicate and an amorphous silica-alumina matrix material (see Ziemer, column 4, line 68 – column 5, line 5 and column 12, lines 28-29).

Ziemer discloses that such a catalyst enhances the performance for hydrocracking to produce a lubricating oil base stock (see Ziemer, column 4, lines 27-29).

Therefore, it would have been obvious to one having ordinary skill in the art at the time of the invention to modify the process of McCandlish to include a hydrocracking catalyst containing a crystalline zeolitic aluminosilicate and an amorphous silica-alumina

matrix material in order to enhances the performance for hydrocracking to produce a lubricating oil base stock.

8. With respect to claims 13 and 14, McCandlish discloses hydrocracking conditions comprising a temperature of 325 degrees C, liquid hourly space velocities of 2, 3, and 4, and a hydrogen rate of 3000 scf/B (see McCandlish, column 7, lines 25-30), but McCandlish does not disclose pressures from 1000 to 3500 psig.

However, Ziemer disclose hydrocracking conditions including pressure in the range of 500 to 3500 psig (see Ziemer, column 4, lines 7-9).

Ziemer discloses that the balancing of reactor conditions to achieve the desired objectives is part of the ordinary skill of the art (see Ziemer, column 4, lines 20-22).

Therefore, it would have been obvious to one having ordinary skill in the art at the time of the invention to modify the process of McCandlish to include hydrocracking conditions including pressure in the range of 500 to 3500 psig because the balancing of reactor conditions to achieve the desired objectives is part of the ordinary skill of the art.

9. With respect to claims 17, 22, and 24, McCandlish does not disclose where the distillate lubricating oil fraction is catalytically dewaxed by a 10 ring molecular sieve that is a zeolite.

However, Ziemer discloses catalytic dewaxing of a lubricating oil base stock with a ZSM-5 zeolite, which is a 10 ring molecular sieve (see Ziemer, column 8, lines 24-39).

Ziemer discloses that dewaxing with a ZSM-5 zeolite is known in the art (see Ziemer, column 8, lines 24-28).

Therefore, it would have been obvious to one having ordinary skill in the art at the time of the invention to modify the process of McCandlish to include catalytic dewaxing of a lubricating oil base stock with a ZSM-5 zeolite because dewaxing with a ZSM-5 zeolite is known in the art.

10. With respect to claims 20, 26, and 28, McCandlish does not disclose where the catalytically dewaxed product is hydrofinished under conditions of a temperature of form 200 to 370 degrees C, a pressure of from 150 to 3000 psig, liquid hourly space velocity of from 0.2 to 5.0 and a hydrogen treat gas rate of from 100 to 5000 scf/B with a catalyst containing at least one Group VIII metal.

However, Ziemer discloses hydrofinishing a catalytically dewaxed product under typical conditions including temperatures between about 190 to about 340 degrees C, at pressures from about 400 to about 300 psig at LHSV between about 0.1 and 20 and a hydrogen recycle rate of 400 to 1500 scf/B and suitable catalysts include Group VIII metals (see Ziemer, column 8, lines 46-65).

Ziemer discloses that hydrofinishing is used to produce more stable lubricating oils (see Ziemer, column 8, lines 46-49).

Therefore, it would have been obvious to one having ordinary skill in the art at the time of the invention to modify the process of McCandlish to include hydrofinishing a catalytically dewaxed product under typical conditions including temperatures between about 190 to about 340 degrees C, at pressures from about 400 to about 300 psig at LHSV between about 0.1 and 20 and a hydrogen recycle rate of 400 to 1500 scf/B and

suitable catalysts include Group VIII metals in order to produce more stable lubricating oils under typical process conditions with a suitable catalyst for hydrofinishing.

11. With respect to claim 30, McCandlish discloses that the bulk metal catalyst can be used in hydrogenation, which is hydrofinishing (see McCandlish, column 3, lines 20-36).

12. Claims 15, 16, 18, 19, 21, 23, 25, 27, and 29 are rejected under 35 U.S.C. 103(a) as being unpatentable over McCandlish in view of Ziemer as applied to claims 1, 2, and 3 above, and further in view of Bennett (US 3902988).

13. With respect to claims 15 and 18, McCandlish in view of Ziemer, disclose everything in claims 1 and 2 (see paragraphs 5 and 6), but do not disclose where the distillate lubricating oil fraction is solvent extracted to produce a raffinate rich in paraffinic hydrocarbons and an extract rich in aromatic hydrocarbons.

However, Bennett discloses subjecting a lubricating oil fraction to solvent extraction with furfural as solvent to remove aromatics from feeds containing paraffin wax (see Bennett, column 1, lines 41-45, column 2, lines 1-8, and column 8, lines 41-43).

Bennett discloses that aromatics removal gives an improved viscosity index (see Bennett, column a, lines 6-9).

Therefore, it would have been obvious to one having ordinary skill in the art at the time of the invention to modify the process of McCandlish in view of Ziemer to include subjecting a lubricating oil fraction to solvent extraction with furfural as solvent to

remove aromatics from feeds containing paraffin wax in order to give the lubricating oil fraction an improved viscosity index.

14. With respect to claims 16, 21, and 23, McCandlish in view of Ziemer further in view of Bennett disclose everything in claim 15 (see paragraph 13), but McCandlish does not disclose where the raffinate is catalytically dewaxed by a 10 ring molecular sieve that is a zeolite.

However, Ziemer discloses catalytic dewaxing of a lubricating oil base stock with a ZSM-5 zeolite, which is a 10 ring molecular sieve (see Ziemer, column 8, lines 24-39).

Ziemer discloses that dewaxing with a ZSM-5 zeolite is known in the art (see Ziemer, column 8, lines 24-28).

Therefore, it would have been obvious to one having ordinary skill in the art at the time of the invention to modify the process of McCandlish in view of Ziemer further in view of Bennett to include catalytic dewaxing of a lubricating oil base stock with a ZSM-5 zeolite because dewaxing with a ZSM-5 zeolite is known in the art.

15. With respect to claims 19, 25, and 27, McCandlish in view of Ziemer further in view of Bennett disclose everything in claim 16 (see paragraph 14), but McCandlish does not disclose where the raffinate is hydrofinished under conditions of a temperature of form 200 to 370 degrees C, a pressure of from 150 to 3000 psig, liquid hourly space velocity of from 0.2 to 5.0 and a hydrogen treat gas rate of from 100 to 5000 scf/B with a catalyst containing at least one Group VIII metal.

However, Ziemer discloses hydrofinishing under typical conditions including temperatures between about 190 to about 340 degrees C, at pressures from about 400

to about 300 psig at LHSV between about 0.1 and 20 and a hydrogen recycle rate of 400 to 1500 scf/B and suitable catalysts include Group VIII metals (see Ziemer, column 8, lines 46-65).

Ziemer discloses that hydrofinishing is used to produce more stable lubricating oils (see Ziemer, column 8, lines 46-49).

Therefore, it would have been obvious to one having ordinary skill in the art at the time of the invention to modify the process of McCandlish in view of Ziemer further in view of Bennett to include hydrofinishing under typical conditions including temperatures between about 190 to about 340 degrees C, at pressures from about 400 to about 300 psig at LHSV between about 0.1 and 20 and a hydrogen recycle rate of 400 to 1500 scf/B and suitable catalysts include Group VIII metals in order to produce more stable lubricating oils under typical process conditions with a suitable catalyst for hydrofinishing.

16. With respect to claim 29, McCandlish discloses that the bulk metal catalyst can be used in hydrogenation, which is hydrofinishing (see McCandlish, column 3, lines 20-36).

17. Claims 31 and 32 are rejected under 35 U.S.C. 103(a) as being unpatentable over McCandlish in view of Ziemer as applied to claims 1 and 2 above, and further in view of Eadie (US 5122258). McCandlish in view of Ziemer disclose everything in claims 1 and 2 (see paragraphs 5 and 6), but do not disclose where the lubricating oil base stocks are Group III base stocks having at least about 90% saturates, a sulfur content less than about 0.03 wt% and a VI of at least 120 or Group II base stocks

having at least about 90% saturates, a sulfur content less than about 0.03 wt% and a VI of less than 120.

However, Eadie discloses one base stock with 95.2 wt% saturates, no sulfur, and a viscosity index of 109 and another base stock with 85.3 wt% saturates, <1 wppm of sulfur, and a viscosity index of 117 (see Eadie, Tables 3 and 2A and MPEP § 2144.05).

Eadie discloses that an objective of hydrotreating is to increase VI of lube oil (see Eadie, column 1, lines 29-30).

Therefore, it would have been obvious to one having ordinary skill in the art at the time of the invention to modify the process of McCandlish in view of Ziemer to include one base stock with 95.2 wt% saturates, no sulfur, and a viscosity index of 109 and another base stock with 85.3 wt% saturates, <1 wppm of sulfur, and a viscosity index of 117 in order to meet the objective of hydrotreating by increasing the VI of lube oil.

Conclusion

18. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure: Miller (US 4859311), Lopez (US 5162282), and Xiao (US 5993644).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to John C. Douglas whose telephone number is 571-272-1087. The examiner can normally be reached on 7:30 A.M. to 4:30 P.M..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Glenn A. Caldarola can be reached on 571-272-1444. The fax phone

number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

JCD

Walter D. Griffin
Primary Examiner